International Journal of Theoretical Physics

Volume 29, Number 1 January 1990

CONTENTS

Fifth Force as a Manifestation of Torsion 1
Venzo de Sabbata and C. Sivaram

Metric-Torsion Gauge Theory of Continuum Line Defects 7
A. Verçin

Connections in Bergmann Manifolds 23
Christian Holm

Cauchy Boundaries of Space-Times 37
Jacek Gruszczak

Algebraically Special Spacetimes 45
Garry Ludwig

Co-Symplectic Geometry and Co-Lagrangian Subspaces 57
F. A. M. Frescura and G. Lubczonok

Inconsistency of Nonlinear Second-Order Equations of Motion of Classical Charges 75
E. Comay

Underlying Probability Distribution of the Canonical Ensemble 85
B. H. Lavenda and J. Dunning-Davies

Stable Gravity Wave of Arbitrary Amplitude in Finite Depth 101
Kern E. Kenyon and David Sheres

Detection of the Dirac Monopole with Magnetic Levitation 109
David Akers

International Journal of Theoretical Physics

Volume 29, Number 2 **February 1990**

CONTENTS

Automata Simulating Quantum Logics 113
A. A. Grib and R. R. Zapatrin

Magnetic Charges, Inertia, and Arrow of Time 125
Anne M. R. Magnon

Quantum Corrections to the Spacetime Metric from Geometric Phase Space Quantization 131
E. R. Caianello, A. Feoli, M. Gasperini, and G. Scarpetta

Generalized Maxwell Equations and Quantum Mechanics. I. Dirac Equation for the Free Electron 141
Alfonso A. Campolattaro

Intermediate-Range Forces? 157
Jeffrey M. Cohen

General Equations of Motion for Test Particles in Space-Time with Torsion 161
Chen Fang Pei

Colliding Plane Gravito-Electromagnetic Waves 173
J. B. Griffiths

General Relativity as a Conformally Gauge Invariant Scalar Gauge Field Theory 183
Hanno Essén

Recurrent Riemann-Cartan Spacetimes 189
L. C. Garcia de Andrade

Relativistic Motion of a Free Particle in a Uniform Gravitational Field 193
Edward A. Desloge

Perturbed Characteristic Functions. III 209
H. A. Buchdahl

International Journal of Theoretical Physics

Volume 29, Number 3 March 1990

CONTENTS

Classical Tunneling 215
Arthur Cohn and Mario Rabinowitz

Möbius Groups over General Fields Using Clifford Algebras Associated with Spheres 225
Jay P. Fillmore and A. Springer

Hamiltonian Structures Related to a New Spectral Problem 247
Qing-ping Liu

New Geometrical Approach to Rainich-Misner-Wheeler Theory 253
K. S. Hammon and L. K. Norris

Scattering Theory in Quantum Field Theory in Configuration Space 269
Edward B. Manoukian

Are Bound States of Color-Excited Leptons Responsible for Anomalous e^+e^- Production in Heavy Ion Collisions? 275
M. Pitkänen

Integrable Classical Systems in Higher Dimensions 299
S. C. Mishra and D. Parashar

Nonlocal Stochastic Quantization of Scalar Electrodynamics 311
M. Dineykhan and Kh. Namsrai

International Journal of Theoretical Physics

Volume 29, Number 4 **April 1990**

CONTENTS

Quantum Theory of Measurement and the Polar Decomposition of an Interaction 339
Pekka J. Lahti

Supercharacters and Superdimensions of Irreducible Representations of $B(O/s)$ Orthosymplectic Simple Lie Superalgebras 351
I. Tsohantjis and J. F. Cornwell

Scalar Gravity and Higgs Potential 361
H. Dehnen and H. Frommert

Covariant, Algebraic, and Operator Spinors 371
V. L. Figueiredo, E. Capelas de Oliviera, and W. A. Rodrigues, Jr.

Dirac and Maxwell Equations in the Clifford and Spin-Clifford Bundles 397
W. A. Rodrigues, Jr. and E. Capelas de Oliviera

Real Spin-Clifford Bundle and the Spinor Structure of Space-Time 413
Waldyr A. Rodrigues, Jr. and Vera L. Figueiredo

Quantum Effects near the Singularity in a General Cosmological Scenario 425
Ashish Mazumder

Flat Bianchi I Friedmann-Robertson-Walker Space-Times 427
Ashish Mazumder

Charged Spherically Symmetric Solution in Mikhail-Wanas Field Theory 431
Ashish Mazumder and Dipankar Ray

Perfect Fluid in a Static Isotropic Universe 435
Ashis Basu, Sushmita Ganguly, and Dipankar Ray

Whistlers and Negative Ions 443
G. C. Das, Surchandra and Kh. Ibohanbi Singh

International Journal of Theoretical Physics

Volume 29, Number 5 May 1990

CONTENTS

Transition Amplitude Spaces and Quantum Logics with Vector-Valued States 455
Sylvia Pulmannová

Canonical Quantization of Inhomogeneous Strings 461
H. P. W. Gottlieb

Singular Lagrangian for the Polaron 467
Jose Jesus Rodriguez-Nuñez

Generalized Maxwell's Equations and Quantum Mechanics. II. Generalized Dirac Equation 477
Alfonso A. Campolattaro

Extensions of the General Method of Generating Clifford Algebras and Comparisons with Various Existing Methods 483
Deming Li, Charles P. Poole, Jr., and Horacio A. Farach

Stefan–Boltzmann Law for Black Bodies and Black Holes 501
B. H. Lavenda and J. Dunning-Davies

Painlevé Analysis and Hamiltonian Structure of a New Space-Dependent KdV Equation 515
S. Purkait and A. Roy Chowdhury

Nonvacuum Taub-Type Cosmological Model 521
M. Carmeli and R. Manor

International Journal of Theoretical Physics

Volume 29, Number 6 **June 1990**

CONTENTS

Higgs-Field Gravity 537
H. Dehnen, H. Frommert, and F. Ghaboussi

Geometrical Theories of Gravitation with Short-Range Forces 547
D. E. Barraco and V. H. Hamity

Static Universe in a Modified Brans–Dicke Cosmology 567
Marcelo Samuel Berman

Cosmological Models in General Relativity and Brans–Dicke Theories: A Comparison 571
Marcelo Samuel Berman

Special Relativistic Gravitational Theory 579
Zhang Junhao and Chen Xiang

Gravitational Wave Due to Explosion of SN 1987A 599
Zhang Junhao and Chen Xiang

Transitions: Contractions and Analytical Continuations of the Cayley–Klein Groups 607
N. A. Gromov

Level I Theory of Large Deviations in the Ideal Gas 621
T. Lehtonen and E. Nummelin

Painlevé Test and Energy Level Motion 637
W.-H. Steeb, S. J. M. Brits, and N. Euler

Ordinary Dichotomy and Perturbations of the Impulse Matrices of Linear Impulsive Differential Equations 643
N. V. Milev and D. D. Bainov

Dependence upon Initial Conditions and Parameter of Solutions of Impulsive Differential Equations with Variable Structure 655
A. B. Dishliev and D. D. Bainov

Properties of the L_p-Solutions of Linear Impulsive Equations in a Banach Space 677
D. D. Bainov, S. I. Kostadinov, and A. D. Myshkis

International Journal of Theoretical Physics

Volume 29, Number 7 July 1990

CONTENTS

Ideals and Solutions of Nonlinear Field Equations 687
Dominic G. B. Edelen

Dipole Solutions in the $SU(2)$ and $SU(3)$ Gauge Theory with Electric and Magnetic Sources 739
D. C. Joshi and Rakesh Prasad

Generalized Noether Theorem and Poincaré Invariant for Non-conservative Nonholonomic Systems 765
Zi-Ping Li and Xin Li

Solutions for Steady Plane Orthogonal MHD Flows 773
C. Thakur and R. B. Mishra

Periodicity and Chaos in a Modulated Logistic Map 779
A. Roy Chowdhury and M. Debnath

Gauge-Invariant and Covariant Operators in Gauge Theories 789
Giovanni Giachetta and Luigi Mangiarotti

International Journal of Theoretical Physics

Volume 29, Number 8 **August 1990**

CONTENTS

Tensor Product of Frame Manuals 805
Alexander Wilce

BRST Quantization and Computation of Static Potentials for Bosonic Membranes 815
R. P. Zaikov

Photon–Electron Scattering Taking Vacuum Energy into Account 825
Milan Marčič

Nonrelativistic Phase-Space and Octonions 835
P. Żenczykowski

CG Methylation in DNA Transcription 853
J. Chela-Flores and R. L. Migoni

Solutions of Coupled KdV-Type Equations 863
Chanchal Guha-Roy

Complete Integrability of Coupled KdV and NLS Equations 867
A. Roy Chowdhury, Pritha Mitra, and Sasanka Purkait

Static Spherically Symmetric Solutions in General Projective Relativity 873
T. Singh and G. P. Singh

De Sitter Gauge Theories of Gravity 885
Shao Changgui, Wang Chunhou, and H. Dehnen

Bianchi Type V Perfect-Fluid Space-Times 901
Shri Ram

BOOK REVIEW: Differential Geometry, Gauge Theories, and Gravity 907
Christian Holm

International Journal of Theoretical Physics

Volume 29, Number 9 **September 1990**

CONTENTS

Quantization in Curvilinear Coordinates 909
Lee Ting Hsang, An Chong Shan, and Zhai Tian Yi

A Suppes Predicate for General Relativity and Set-Theoretically Generic Spacetimes 935
N. C. A. da Costa, F. A. Doria, and J. A. de Barros

Maximal Acceleration, Maximal Angular Velocity, and Causal Influence 963
M. Toller

Szilard's Demon Revisited 985
Jorge Berger

Singularities in Spacetimes with Torsion 997
L. C. Garcia de Andrade

Energy and Momentum from the Palatini Formalism 1003
George L. Murphy

Nonstatic Axisymmetric Universe Model and Its Evolution 1011
Ashfaque H. Bokhari, Amjad Pervez, and Muhammad A. Mughal

Radiating Viscous Universes Coupled with Zero-Mass Scalar Field: Exact Solutions 1015
Koijam Manihar Singh and K. S. Bhamra

Two-Phase MFD Flows in Orthogonal Curvilinear Coordinate System 1029
Chandreshwar Thakur and Ram Babu Mishra

Errata: Automorphisms and Symmetries of Quantum Logics 1039
Vera Trnková

International Journal of Theoretical Physics

Volume 29, Number 10 **October 1990**

CONTENTS

Constructive Approach to Logics of Physical Systems: Application to EPR Case 1041
Jarosław Pykacz and Emilio Santos

Virasoro Algebras in the Theory of Bosonic p-Branes 1059
R. P. Zaikov

Spontaneous Compactification and Quantized Charges 1065
D. K. Ross

Exact Quantum Partition Function of the BCS Model 1073
Alexander F. Izmailov and Alexander R. Kessel

Existence of Magnetic Charge 1091
David Akers

KdV-Type Solitons in Multicomponent Relativistic Plasmas 1099
B. Karmakar, G. C. Das, and Kh. Ibohanbi Singh

Extended Hill Equation 1111
Zhong Jin Yang and Jie Yao

Generalized Poisson Algebras and Hamiltonian Dynamics 1115
G. C. Sherry

Biframe Bundle Geometry: An Extension of Rainich-Misner-Wheeler Theory to Include Sources 1127
K. S. Hammon

International Journal of Theoretical Physics

Volume 29, Number 11 **November 1990**

CONTENTS

Introduction 1153

Topological Solitons and Zero Modes in High-T_c Superconductivity 1155
Ryszard Mańka

Kinematics of Media with Continuously Changing Topology 1167
I. A. Kunin

Space-Time as a Micromorphic Continuum 1177
Jan J. Sławianowski

Mapping Noether Identities into Bianchi Identities in General Relativistic Theories of Gravity and in the Field Theory of Static Lattice Defects 1185
J. Dermott McCrea, Friedrich W. Hehl, and Eckehard W. Mielke

Cartan Connection and Defects in Bravais Lattices 1207
L. Mistura

The Differential Geometry of Elementary Point and Line Defects in Bravais Crystals 1219
E. Kröner

Global Invariance and Lie-Algebraic Description in the Theory of Dislocations 1239
Andrzej Trzęsowski and Jan J. Sławianowski

Models of Defect-Mediated Melting 1251
W. Janke

A Trial of the Gauge Theory for the Stress-Function Space 1271
Sitiro Minagawa

Helicity Theorem and Vortex Lines in Superfluid ^{4}He 1277
Zbigniew Peradzynski

International Journal of Theoretical Physics

Volume 29, Number 12 **December 1990**

CONTENTS

Radiative Kinks and Fermionic Zero Modes in a $(\lambda\phi^6)_{1+1}$ Model 1285
J. Casahorrán, J. G. Esteve, and A. Tarancón

$ISO(3,1|N)$ and $OSp(N|4)$ Supergravities 1299
Shao Changgui, Liu Zhengren, and Xu Bangqing

Dirac's Constraint Theory: Corrections to Alleged Counterexamples 1309
Qi Zhi

Temperature-Dependent Particle Production and Stimulated Emissions by External Sources 1313
Edward B. Manoukian

Anomalous Parity-Violating Coupling of Photon to Nucleon 1327
P. Żenczykowski

Quantum Mechanics in a Discrete Model of Classical Physics 1335
Geoffrey Hemion

Charged Spherical Shell in the Field of an Abelian Monopole 1369
C. Wolf

Underlying Probability Distributions of Planck's Radiation Law 1379
B. H. Lavenda

Post-Newtonian Equations for the Metric Perturbation Generated by a Rotating Elastic Earth 1393
J. M. Gambi, A. San Miguel, and F. Vicente

Brans–Dicke Models with Time-Dependent Cosmological Term 1411
Marcelo Samuel Berman and M. M. Som

Density Perturbations in a Brans–Dicke Cosmological Model 1415
Marcelo Samuel Berman

Brans–Dicke Cosmology with Time-Dependent Cosmological Term 1419
Marcelo Samuel Berman

Brans–Dicke Theory and the Duration of the Early Universe 1423
Marcelo Samuel Berman

Newtonian Motion and Lorentz–Dirac Equation 1427
E. Comay

Erratum and Comment 1437
R. D. Tscheuschner